

WE CLAIM:

1. A door lock apparatus, comprising the combination of:
- a trim plate securable to the outside of a door;
  - a cylindrical lock assembly secured to said trim plate inwardly thereof
- when said plate is secured to the door, said cylindrical lock assembly including a latchbolt, a lock body having a retractor for said latchbolt, a spindle inwardly extending from said lock body and coupled to said retractor for unlatching said latchbolt upon rotation of said spindle, and a handle secured to said spindle for rotating said spindle;
- a cylinder lock including a housing and a cylinder actuable for rotation in said housing, said cylinder lock secured to said trim plate and outwardly extending from said lock body; and
  - a cam secured to said cylinder and rotatable therewith, said cam coupled to said retractor for unlatching said latchbolt upon rotation of said cylinder.

- 1 2. The apparatus according to Claim 1, further including:  
2 a key insertable in said cylinder lock and rotatable for rotating said  
3 cylinder.
- 1 3. The apparatus according to Claim 2, wherein:  
2 said cylinder lock is a mortise lock cylinder.
- 1 4. The apparatus according to Claim 1, wherein:  
2 said trim plate includes a pull handle for permitting the door to be pulled  
3 open when said plate is secured to the door and with said retractor unlatching  
4 said latchbolt.
- 1 5. The apparatus according to Claim 1, wherein:  
2 said trim plate is a pull plate.
- 1 6. The apparatus according to Claim 1, wherein:  
2 said trim plate includes a door engaging section securable to the door, a  
3 pull handle extending from said door engaging section, and a top edge and a  
4 bottom edge tapering toward said pull handle from said door engaging section.

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1 7. The apparatus according to Claim 2,  
2 wherein  
3 said trim plate includes an opening;  
4 and further including  
5 an attachment plate secured to said trim plate, said attachment plate  
6 including an opening in registration with said opening in said trim plate, said  
7 openings permitting insertion of said cylinder lock therein, said attachment plate  
8 adapted to releasably secure said cylinder lock thereto when said cylinder lock is  
9 inserted in said openings.

1 8. The apparatus according to Claim 7, wherein:  
2 said openings in said attachment plate and said opening in said trim plate  
3 are configured for facilitating outward withdrawal of said cylinder lock with  
4 said key inserted in said cylinder lock.

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1 9. The apparatus according to Claim 3, wherein:

2 said trim plate includes an opening with at least two spaced radial  
3 protrusions into said opening;

4 said mortise lock cylinder includes at least two longitudinal grooves  
5 therealong in registration with said at least two protrusions for rotationally  
6 orienting said mortise lock cylinder on said trim plate; and

7 said rotatable cam includes an arcuate member having cam ends for  
8 operatively cooperating with said retractor upon rotation of said cam by said key  
9 inserted in said mortise lock cylinder, said arcuate member including peripheral  
10 notches at least one of which is alignable with a one of said grooves and a one  
11 of said protrusions when said cam is rotated by said key inserted in said mortise  
12 lock cylinder.

1 10. The apparatus according to Claim 9, wherein:

2 said opening in said trim plate further includes a cutout adjacent at least  
3 one of said protrusions configured for permitting a one of said cam ends to pass  
4 through said cutout when said cam is rotated by said key inserted in said mortise  
5 lock cylinder.

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1 11. The apparatus according to Claim 10, further including:  
2 an attachment plate secured to said trim plate, said attachment plate  
3 including an opening configured with at least one cutout similar to said at least  
4 one cutout in said trim plate, said openings including said cutouts in registration,  
5 said attachment plate adapted to releasably secure said mortise lock cylinder  
6 thereto when said mortise lock cylinder is inserted in said openings.

1 12. The apparatus according to Claim 11, wherein:  
2 said opening in said attachment plate further includes an arcuate cutout  
3 for facilitating entry of said arcuate member into engageable position with said  
4 retractor.

5 13. The apparatus according to Claim 1, further including:  
6 a hold-back apparatus in said cylindrical lock assembly including a lock  
7 in said handle for locking said spindle when said spindle is in a rotated position  
8 unlatching said latchbolt.

1 14. The apparatus according to Claim 13, wherein:  
2 said handle is a lever handle and is in a rotated position when said  
3 spindle is locked with said latchbolt unlatched.

1 15. The apparatus according to Claim 1,  
 2 wherein  
 3 said lock body includes a chassis plate rotationally supporting said  
 4 spindle and including a radial first notch;  
 5 said spindle includes a second notch in radial alignment with said first  
 6 notch when said spindle is in a rotated position unlatching said latchbolt;  
 7 and further including  
 8 a radially extending member carried by said spindle and captured by said  
 9 first notch; and  
 10 a lock in said handle coupled to said member for moving said member  
 11 longitudinally along said notches, when said notches are radially aligned,  
 12 between a first longitudinal position captured by said second notch and a second  
 13 longitudinal position not captured by said second notch.

1 16. The apparatus according to Claim 15, wherein:  
 2 said handle is a lever handle and is in a rotated position when said  
 3 latchbolt is unlatched.

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1 17. The apparatus according to Claim 15,

2 wherein

3 said lock is a bored cylinder lock having a rotatable tail piece;

4 and further including

5 a rotational-to-translational motion converter carried by said spindle for

6 converting rotation of said tail piece to longitudinal movement of said member.

1 18. The apparatus according to Claim 17, further including:

2 a key insertable in said bored lock cylinder and rotatable for rotating said

3 tail piece.

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19. A door lock apparatus, comprising the combination of:

a cylindrical lock assembly including a latchbolt, a lock body having a retractor for said latchbolt, a spindle extending from a first side of said lock body and coupled to said retractor for unlatching said latchbolt upon rotation of said spindle, and a handle secured to said spindle for rotating said spindle;

a cylinder lock including a housing and a cylinder actuable for rotation in said housing, said cylinder lock extending from a second side of said lock body opposite said first side; and

a cam secured to said cylinder and rotatable therewith, said cam coupled to said retractor for unlatching said latchbolt upon rotation of said cylinder.



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1 20. The apparatus according to Claim 19, further including

2 a key insertable in said cylinder lock and rotatable for rotating said  
3 cylinder.

1 21. The apparatus according to Claim 20, wherein:

2 said cylinder lock is a mortise lock cylinder.

1 22. The apparatus according to Claim 19,

2 further including

3 a door trim securable to a face of a door;

4 and wherein

5 said lock body is secured to said door trim with said cylinder rotatably  
6 actuatable from one side of said door trim and with said handle of said cylindrical  
7 lock assembly rotatable from another side of said door trim opposite said one  
8 side.

23. The apparatus according to Claim 22, wherein:

2 said door trim is a pull plate.

1 24. The apparatus according to Claim 23, wherein:

2 said pull plate includes a door engaging section securable to the door, a  
3 pull handle extending from said door engaging section, and a top edge and a  
4 bottom edge tapering toward said pull handle from said door engaging section.

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1 25. The apparatus according to Claim 19, further including:

2 a hold-back apparatus in said cylindrical lock assembly including a lock  
3 in said handle for locking said spindle when said spindle is in a rotated position  
4 unlatching said latchbolt.

1 26. The apparatus according to Claim 25, wherein:

2 said handle is a lever handle and is in a rotated position when said  
3 spindle is locked with said latchbolt unlatched.

1 27. The apparatus according to Claim 19,

2 wherein

3 said lock body includes a chassis plate rotationally supporting said  
4 spindle and including a radial first notch;

5 said spindle includes a second notch in radial alignment with said first  
6 notch when said spindle is in a rotated position unlatching said latchbolt;

7 and further including

8 a radially extending member carried by said spindle and captured by said  
9 first notch; and

10 a lock in said handle coupled to said member for moving said member  
11 longitudinally along said notches, when said notches are radially aligned,  
12 between a first longitudinal position captured by said second notch and a second  
13 longitudinal position not captured by said second notch.

1 28. The apparatus according to Claim 27 wherein:

2 said handle is a lever handle and is in a rotated position when said  
3 latchbolt is unlatched.

1 29. The apparatus according to Claim 27,

2 wherein

3 said lock is a bored cylinder lock having a rotatable tail piece;

4 and further including

5 a rotational-to-translational motion converter carried by said spindle for  
6 converting rotation of said tail piece to longitudinal movement of said member.

1 30. The apparatus according to Claim 27, further including:

2 a key insertable in said bored lock cylinder and rotatable for rotating said  
3 tail piece.

1 31. The apparatus according to Claim 22,

2 wherein

3 said door trim includes an opening;

4 and further including

5 an attachment plate secured to said door trim, said attachment plate  
6 including an opening in registration with said opening in said door trim, said  
7 openings permitting insertion of said cylinder lock therein, said attachment plate  
8 adapted to releasably secure said cylinder lock thereto when said cylinder lock is  
9 inserted in said openings.

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- 1 32. The apparatus according to Claim 31, wherein:
- 2       said opening in said attachment plate and said opening in said door trim
- 3       are configured for facilitating outward withdrawal of said cylinder lock upon
- 4       rotation of said cylinder.

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1 33. A cylindrical lock apparatus for a door, comprising the combination of:  
2 a latchbolt, a lock body having a retractor for said latchbolt, a spindle  
3 extending from a first side of said lock body and coupled to said retractor for  
4 unlatching said latchbolt upon rotation of said spindle, a handle secured to said  
5 spindle for rotating said spindle, and a lock in said handle for locking said  
6 spindle when said spindle is in a rotated position unlatching said latchbolt.

1 34. The apparatus according to Claim 33, wherein:  
2 said handle is a lever handle and is in a rotated position when said  
3 spindle is locked for unlatching said latchbolt.

1 35. A cylindrical lock apparatus for a door, comprising the combination of:  
2 a latchbolt, a lock body having a retractor for said latchbolt, a spindle  
3 coupled to said retractor for unlatching said latchbolt upon rotation of said  
4 spindle, and a handle secured to said spindle for rotating said spindle;  
5 a chassis plate rotationally supporting said spindle with respect to said  
6 lock body, said chassis plate including a radial first notch;  
7 a second notch in said spindle in radial alignment with said first notch  
8 when said spindle is in a rotated position unlatching said latchbolt;  
9 a radially extending member carried by said spindle and captured by said  
10 first notch; and  
11 a lock in said handle coupled to said member for moving said member  
12 longitudinally along said notches, when said notches are radially aligned,  
13 between a first longitudinal position captured by said second notch and a second  
14 longitudinal position not captured by said second notch.

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36. The apparatus according to Claim 35, wherein:

said handle is a lever handle and is in a rotated position when said  
latchbolt is unlatched.

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37. The apparatus according to Claim 35,

wherein

said lock is a bored cylinder lock having a rotatable tail piece;

and further including

a rotational-to-translational motion converter carried by said spindle for  
converting rotation of said tail piece to longitudinal movement of said member.

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38. The apparatus according to Claim 37, further including:

a key insertable in said bored lock cylinder and rotatable for rotating said  
tail piece.

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